Finally, some comparisons are given between Clark cells and Daniells, with equi-dense solutions, both of Raoult's pattern and of that described recently by Dr. Fleming.

V. "Account of a new Volcanic Island in the Pacific Ocean." By WILFRED ROWELL, H.B.M. Consul in Samoa. In a letter to the Hydrographer of the Admiralty. Received January 17, 1886.

Hydrographic Department, Admiralty, S.W.,
SIR, *16th January*, 1886.

I HAVE the honour to forward to you a photograph and a copy of a letter received from H.M. Consul at Samoa, relating to a volcanic island recently formed by a submarine volcano, in the vicinity of the Friendly Group in the Pacific Ocean, which I think may be of interest to the Royal Society.

I also forward a chart of the locality showing the position of the new island.

It is unfortunate that, as the hydrographical knowledge of the vicinity is very imperfect, no information exists as to the depths from which this island has pushed its way.

(Signed) W. J. L. WHARTON,
The Secretary, Royal Society. *Hydrographer.*

(Enclosure.)

H.B.M. Consulate, Samoa,
SIR, *November 21st*, 1885.

I HAVE the honour to report that whilst on a passage from the "Friendly" Islands to the "Navigators" Islands, on board the steam ship "Janet Nicoll," we observed a newly-risen volcanic island. I was informed in "Tongatabu" that the eruption was first remarked from that island (a distance of over 40 miles) on Tuesday, 13th of October. We passed it on Sunday, the 8th of November, at a distance of about $1\frac{1}{2}$ miles.

The following will be the approximate position by compass bearings:—

Peak of "Kao" Island over centre of "Tefoa" Island, north by east.

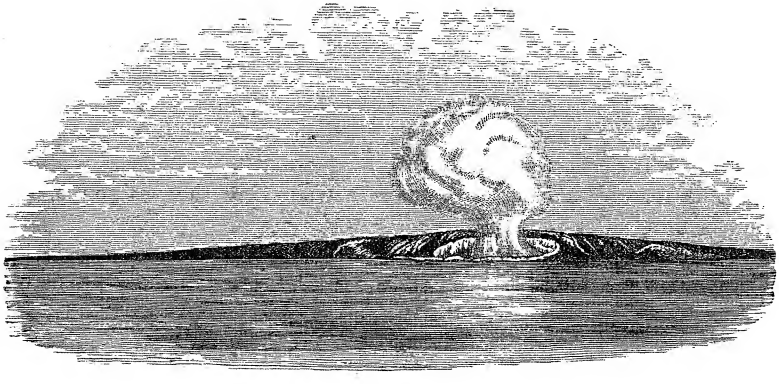
West end of "Honga Tonga" Island, south by east.

Centre of crater from ship west $1\frac{1}{2}$ miles.

The island appeared to be about two miles in length north by west and south by east, of about 200 feet in height, having a reef on the

northern extremity of half a mile in extent, with one also to the southward of $1\frac{1}{2}$ miles (approx.).

I have the honour to enclose a photograph which I took at the time the island bore west $1\frac{1}{2}$ miles, and which although very inferior and taken under circumstances of considerable difficulty, will give some idea of the appearance of the eruption.

(Signed) WILFRED ROWELL,
H.B.M. Consul, Samoa.

To the Hydrographer of the Admiralty, Whitehall.